

Is PAH Exposure of Adult Coho Salmon Related to Abnormal Pre-spawn Mortality?

Gina M. Ylitalo, Jon Buzitis, Margaret M. Krahn, Nathaniel Scholz and Tracy K. Collier
Northwest Fisheries Science Center

Abstract

Populations of wild Pacific salmon are declining, and it is accepted that various natural and anthropogenic factors have contributed to the decline of these salmon populations. Over the past three years (1999-2001), high numbers of pre-spawn adult coho salmon (*Onchorhynchus kisutch*) have been found dead in small streams in urban and developing areas of Puget Sound (see presentation by Reed et al., this conference). Other species of salmonids that spawn in these streams do not appear to be dying in appreciable numbers. Although the causes for the pre-spawn mortalities of the Puget Sound coho are not known, the deaths do not appear to be related to disease or high parasite loads. There have been anecdotal observations of neurological symptoms (e.g., gaping, convulsions) in the affected fish. Preliminary analyses by the National Marine Fisheries Service, Northwest Fisheries Science Center, indicate that the symptomatic pre-spawn coho had significantly elevated concentrations of metabolites of polycyclic aromatic hydrocarbons (PAH) in their bile compared to levels in non-symptomatic pre-spawning coho. Further sampling and analysis during the 2002 spawning season is being conducted to evaluate the hypothesis that PAH exposure may contribute to the observed abnormal mortality events, and we will present and discuss our results.